Montana Hospital Discharge Data System

Surveillance Report

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Hospitalizations For Cardiovascular Diseases In Montana, 2000-2008[1]

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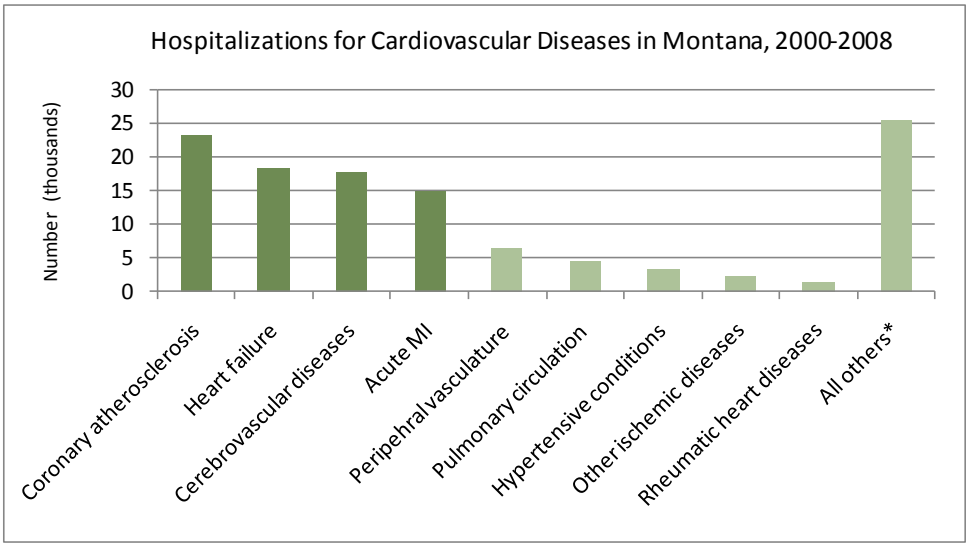
Cardiovascular diseases include the chronic, degenerative diseases such as ischemic heart diseases (reduced blood supply to the heart muscle, including coronary atherosclerosis and acute myocardial infarction), heart failure, and cerebrovascular diseases (including stroke) that are the leading causes of chronic morbidity and mortality in Montana and the US.[2] Many of these conditions can be avoided through primary prevention (reducing risk factors) and a large proportion of deaths may be averted by secondary prevention (aggressive treatment of patients hospitalized for cardiovascular conditions).[3] Nevertheless, coronary atherosclerosis, heart failure, cerebrovascular diseases, and acute myocardial infarction accounted for approximately 8% of all hospitalizations in Montana between 2000 and 2008, and for 63% of all hospitalizations for cardiovascular diseases.



* Includes diseases of the pericardium and endocardium, heart valve disorders, cardiomyopathy, conduction disorders, dysrhythmias, and disease of the lymphatic system.

[1] The Montana Hospital Discharge Data System (MHDDS) receives annual de-identified hospital discharge data sets through a Memorandum of Agreement with the Montana Hospital Association.[1] Most hospitals in Montana participate in voluntary reporting of discharge data from their Uniform Billing Forms, version 2004 (UB-04). The MHDDS receives information on more than 90% of the inpatient admissions from non-psychiatric facilities in the state. MHDDS does not receive data on emergency department visits or outpatient procedures at this time.
[2] http://www.dphhs.mt.gov/statisticalinformation/vitalstats/index.shtml; Heron MP et al, Deaths: Final Data for 2006. National Vital Statistics Reports,vol 57, no 14. Hyattsville, MD: National Center for Health Statistics, 2009.
[3] *The Burden of Heart Disease and Stroke in the Big Sky State*. Montana Department of Public Health and Human Services, 2007. http://www.dphhs.mt.gov/PHSD/cardiovascular/pdf/146192LR__000.pdf

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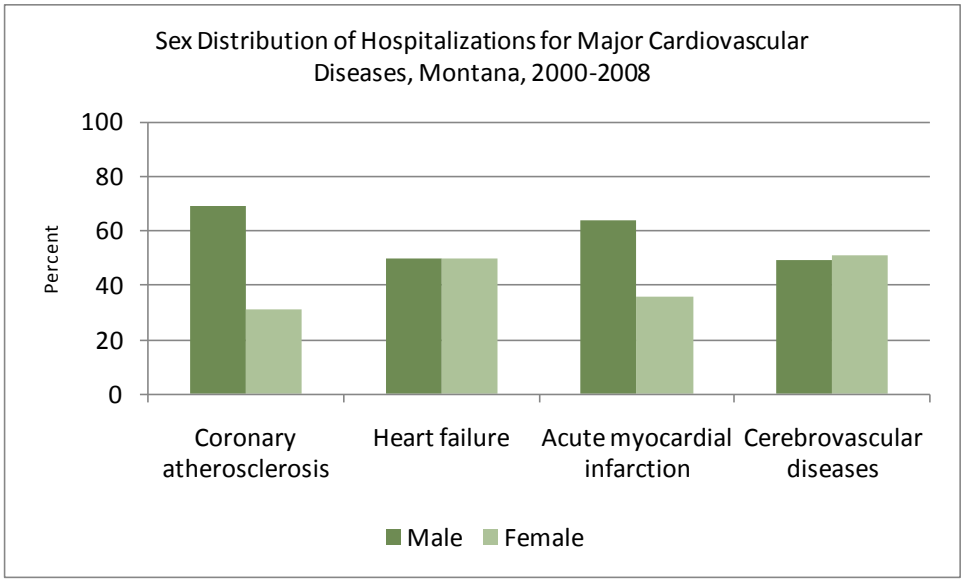
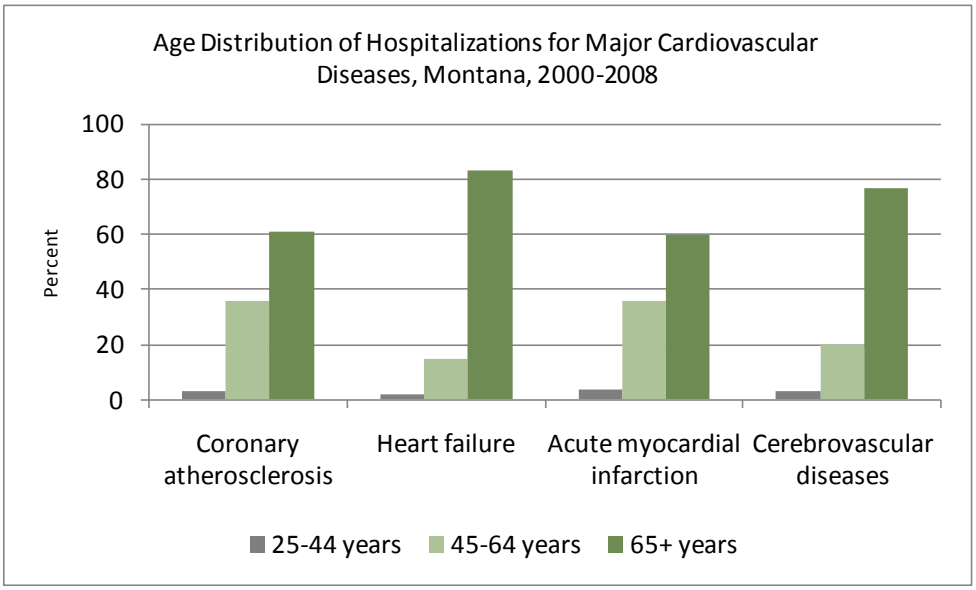
The adult population of Montana is approximately 49% male and 51% female although males have a higher mortality rate so that by age 65 the sex ratio is 44% male and 56% female; the ratio is even more skewed in older age groups.[4] Males accounted for a disproportionate number of hospitalizations for coronary atherosclerosis and acute myocardial infarction in Montana but the sex ratio of hospitalizations for heart failure and cerebrovascular disease was similar to the population sex ratio.

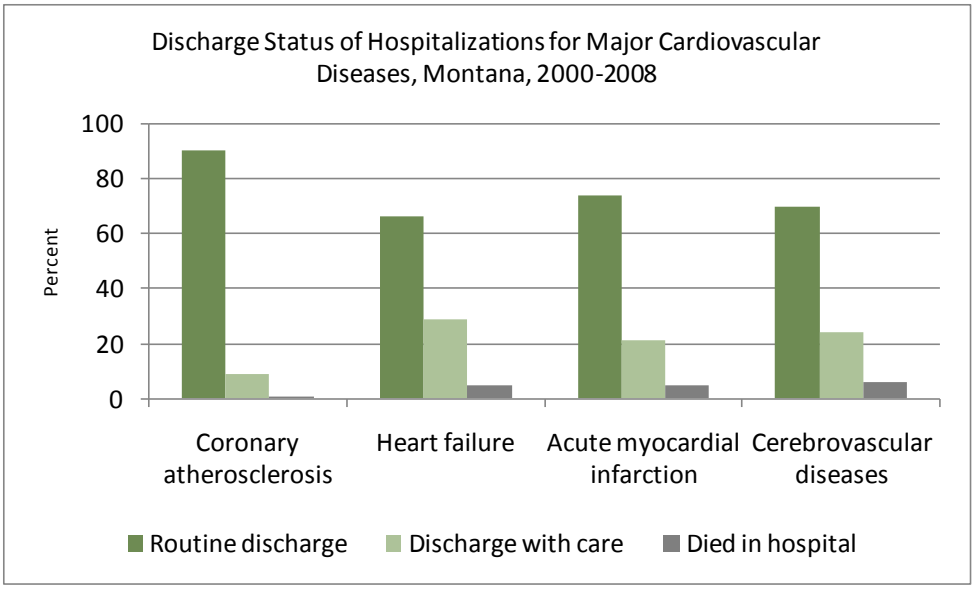


The major cardiovascular diseases affected patients age 65 years and older in substantially greater numbers than patients in younger age groups, although patients between the ages of 45 and 64 years accounted for nearly 40% of hospitalizations for both coronary atherosclerosis and acute myocardial infarction.

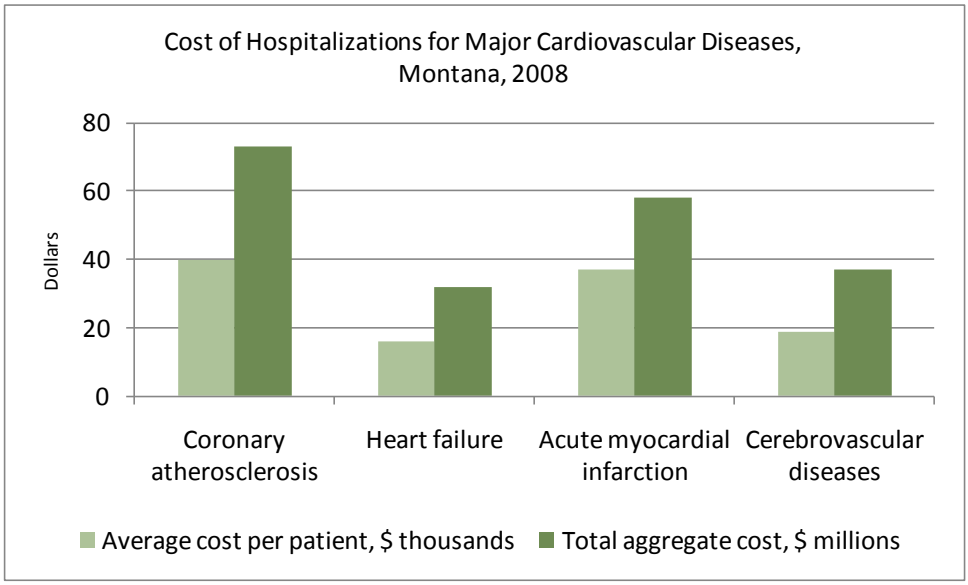


[4] National Center for Health Statistics. http://www.cdc.gov/nchs/about/major/dvs/popbridge/popbridge.htm

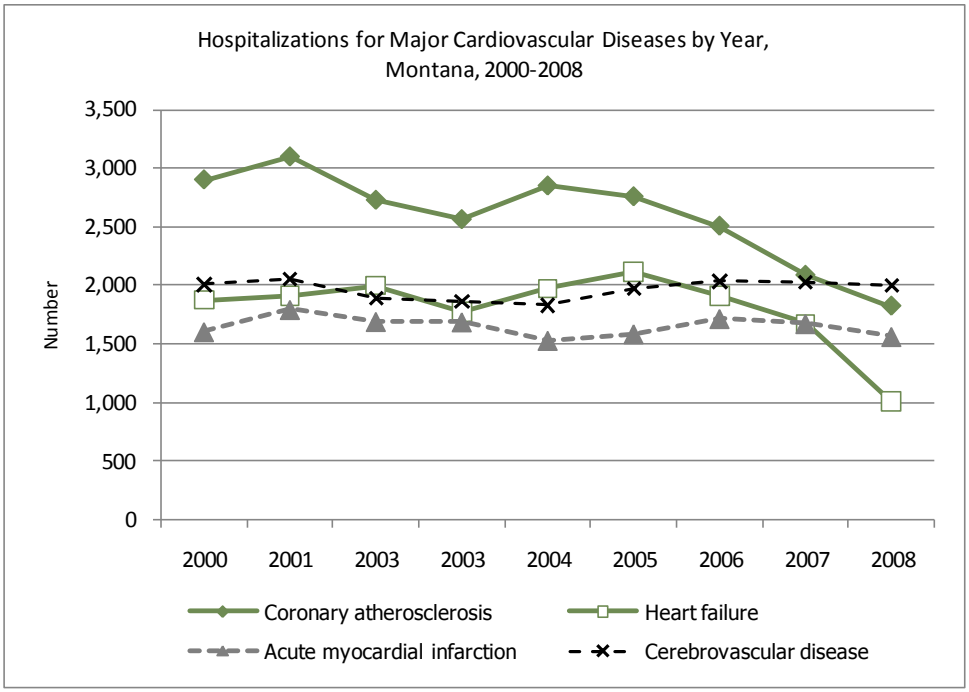
Most patients hospitalized for the major cardiovascular diseases were routinely discharged to home but one quarter of patients with heart failure and one fifth of patients with acute myocardial infarction or cerebrovascular diseases were discharged to some form of care, either at home or in another medical facility such as a rehabilitation center or a nursing home. Few patients died in the hospital.



The average cost per hospitalization for coronary atherosclerosis and acute myocardial infarction were nearly $40,000 per patient in 2008 (the first year in which the MHDDS has data on hospital costs). Heart failure and cerebrovascular hospitalizations were less costly but the average cost per patient was still nearly $20,000 for each of these conditions. The total costs aggregated across all patients for each condition were substantial, especially for coronary atherosclerosis at $73 million and acute myocardial infarction at $58 million. The bulk of these costs (57%) were paid by Medicare because of the age distribution of patients, but 35% were paid by commercial insurance; 4% were paid by Medicaid and 4% of patients were uninsured.



Hospitalizations for both coronary atherosclerosis and heart failure declined sharply between 2000 and 2008, by one third and one half, respectively. It is not clear from MHDDS data whether these declines are attributable to decreased incidence, although these trends parallel those for mortality in Montana and the US as a whole.[5] Hospitalizations for acute myocardial infarction and cerebrovascular diseases were fairly constant over the interval 2000 through 2008.



Conclusion

It appears that Montana is making progress in reducing morbidity as well as mortality from coronary atherosclerosis and heart failure, but the downward trend is not shared by acute myocardial infarction or cerebrovascular diseases. In spite of recent declines in admissions, the total hospitalization costs for these conditions in Montana is $200 million annually, more than half borne by Medicare.

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Please visit our website at http://www.dphhs.mt.gov/PHSD/MT-HDDS/MTHDDS-index.shtml

[5] *The Burden of Heart Disease and Stroke in the Big Sky State*. Montana Department of Public Health and Human Services, 2007. http://www.dphhs.mt.gov/PHSD/cardiovascular/pdf/146192LR__000.pdf

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